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Gelfoam embolization of high-flow priapism due to coitus: A case report

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ABSTRACT

Priapism is a condition in which a person has an erection without sexual arousal and lasts for at least 4 hours. High flow priapism (HFP) usually follows blunt trauma to the penis or perineum, causing arterial-lacunar fistula. HFPs are rare after sexual intercourse, and early treatment by embolization can prevent erectile dysfunction (ED). The use of gel foam has good results and has shown the least side effects.

1. Introduction

Priapism is a condition in which a person has an erection without sexual arousal and lasts for at least 4 hours. Priapism is divided into two types, low-flow priapism (LFP) and high-flow priapism (HFP), whose symptoms and treatment are somewhat different.[1] The type of priapism can be differentiated based on clinical and laboratory symptoms and the causes of priapism and also by using ultrasound (Table 1).

LFP requires immediate intervention, and if the treatment is not performed in its golden time, the person will develop erectile dysfunction in the future. HFP is not a urological emergency and does not require immediate intervention. It usually follows blunt trauma to the penis or perineum, followed by damage to the cavernous artery, causing arterial-lacunar fistula.[2]

We report a 28-year-old man with HFP after sexual intercourse successfully treated by angioembolization.

2. Case report

The patient is a 28-year-old man who had painless priapism after sexual intercourse. The patient was referred to the doctor after 6 days and was asked for an ultrasound. On ultrasound, the blood flow velocity in the cavernosal arteries on both sides was 23 cm/s and the blood flow was triphasic. In the corpus cavernosum on the right, an echo-free center with dimensions of 12 × 10 mm can be seen, in which arterial blood is connected to venous blood, and the above view is in favor of venous arterial fistula. The patient had no history of any drug use and no history of underlying disease. All of the patient's laboratory tests were normal. The patient was admitted with a diagnosis of high-flow priapism and underwent angiography by the interventional radiologist.

In angiography, a pseudoaneurysm with a Feeding branch of the right internal pudendal artery was seen at the base of the penis, in the right corpus cavernosum, which had a brief leak to the corpus cavernosum. The right internal pudendal artery was coaxially and super selectively catheterized by microcatheter and micro guide. Embolization of pseudoaneurysm and its Feeding branch was performed by about 8 cc of gelfoam suspension (Fig. 1).

Complete obstruction of pseudoaneurysm and its feeding artery was seen in control angiography at intervals of 5, 15, and 25 minutes. In the control ultrasound during the procedure, there wasn't any flow in the pseudoaneurysm (Fig. 2).

The patient's symptoms completely disappeared and the patient was discharged without evidence of priapism. In more than two months follow-up, the patient did not have any particular problem such as erectile dysfunction (ED) or any signs of recurrence.

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Table 1
Comparision of Low-Flow priapism with High-Flow priapism.

	Low-Flow Priapism	High-Flow Priapism
Penile Pain	Yes	No
Blood Gases	Acidosis/Hypoxia/Hypercapnia	Normal
History of Trauma	No	Yes
Arteriocavernosal Fistula	No	Yes
Full Rigidity	Yes	No

3. Discussion

HFP following sexual intercourse was first reported in the 1960s by Burt et al. This type usually occurs following damage to the cavernous artery and its branches.[3] HFP is not a urological emergency, unlike the LFP type. The type of priapism can usually be diagnosed using detailed history and physical examination, as well as corpus cavernosal blood analysis and ultrasound. In HFP, sometimes conservative treatment such as using ice and compressing the perineum can be helpful. Usually following conservative treatment, some amount of ED occurs in patients. It has been proven that the most definitive method of treatment is arterial embolization.[4]

Various materials are used to perform angioembolization. These materials are divided into two categories:

Temporary occlusive: autologous blood-clot, gel foam Permanent occlusive: metal micro-coil, N-butyl cyanoacrylate, and polyvinyl alcohol particles.

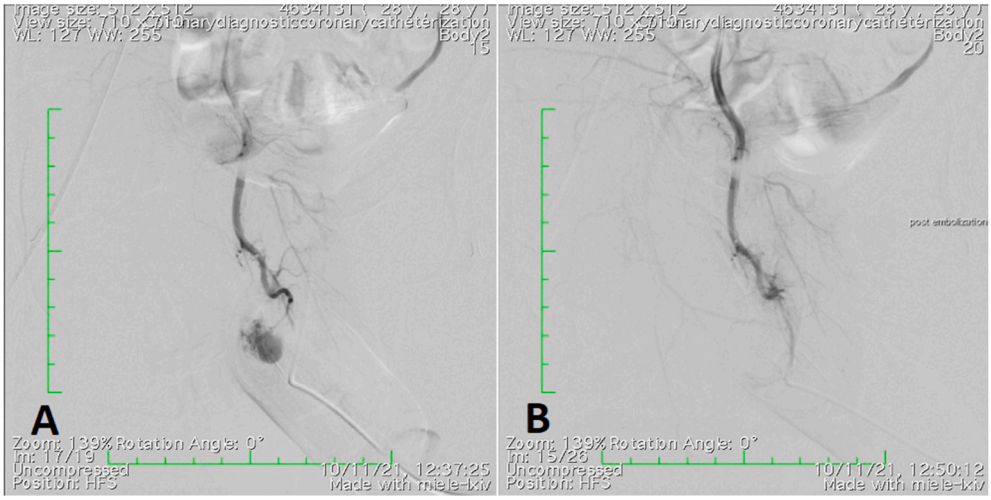

Fig. 1. Embolization of pseudoaneurysm and its Feeding branch with gelfoam. Pre-embolization (A), Post-embolization (B).

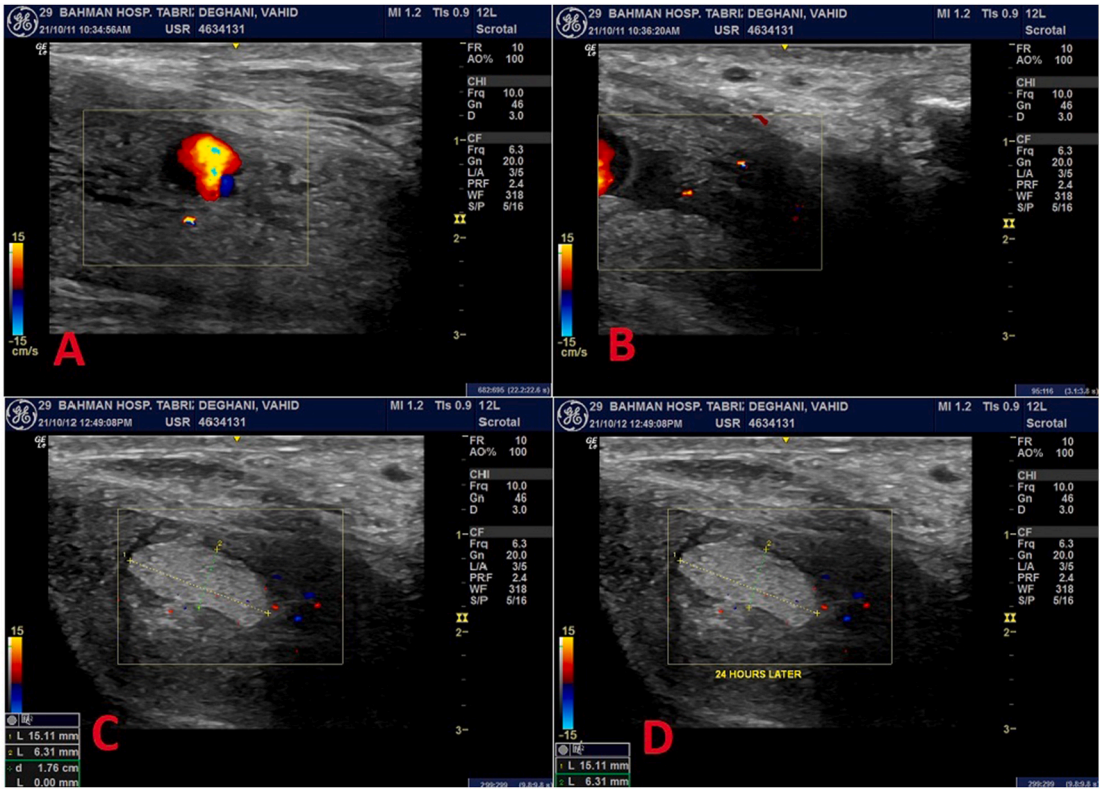

Fig. 2. Sonography before the procedure (A–B) and after the procedure (C–D).

The efficacy of the two groups is almost the same, but complications such as ED are less in the temporary group.[5]

Materials such as blood autologous clots and Gelfoam are preferred due to the recanalization of arterial supply. Gelfoam is temporary embolic material, which resorbs within four to six weeks. Because of its nonopaque structure, exact placement is very important.[3]

In general, it seems that performing super-selective embolization as soon as possible for such patients can prevent the occurrence of ED.

4. Conclusion

HFPs are rare after sexual intercourse, and early treatment by embolization can prevent ED and maintain sexual potency. The use of gel foam has good results and has shown the least side effects.

Ethics

Patient informed consent was obtained to publish his information. The patient's private information remained confidential with the researchers.

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None.

Roles

Farzad Allameh: Conceptualization, Methodology, Software.

Arash Khameneh Bagheri: Writing- Original draft preparation, Visualization, Investigation.

Seyyed Ali Hojjati: Supervision, Software, Validation.

Saba Faraji: Writing- Reviewing and Editing.

Amirhossein Eslami: Data curation.

Declaration of competing interest

The authors report no conflicts of interest in this work.

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